



# *Sprayo-Flake*

**SOUND CONTROL  
THERMAL INSULATION  
CONDENSATION CONTROL**

*Sprayed* **DIRECTLY ON TO ANY CLEAN RIGID SURFACE—CON-  
CRETE, MASONRY, PLASTER, METAL, CEMENT AND  
ASBESTOS BOARD, ETC.—IN ANY THICKNESS REQUIRED**

**INSTALLED IN:—Schools, Hospitals, Churches, Industrial Plants, Office Buildings, Theatres, Commercial Buildings,  
Dwellings, Hotels, Auditoriums, Apartment Buildings, Cold Storage Plants, Storage Tanks, Libraries, Warehouses,  
Steel Mills, Ordnance Plants, Airplane Hangars, Restaurants, Cafeterias, Machine Shops, Laboratories, Banks,  
Public Utility Buildings, Dairy Buildings, etc.**

*Sprayo-Flake Company, Chicago 18, Ill.*



## SPRAYO-FLAKE PROCESS

The highly efficient bonded Sprayo-Flake Spray-Molded Insulation Mat is unique in that it is fabricated and applied in one single, efficient, economical operation on the job. The Sprayo-Flake Insulation Process consists of forcibly projecting, through a specially constructed Sprayo-Flake Insulation Gun, dry fibrous materials simultaneously with an atomized adhesive. The adhesive primes the surface being treated and coats the fibres as they leave the nozzle of the Sprayo-Flake Insulation Gun, causing them to build up in a homogeneous, light weight, bonded, cellular insulation mat on the structural surfaces treated. Because Sprayo-Flake Insulation is fabricated and applied on the job in one operation, it is always quoted on a job contract basis including labor and materials. . . . The process, the application equipment, and the finished insulating mat are fully protected by United States and Canadian patents.

## CHARACTERISTICS

**SPRAYO-FLAKE INSULATION PROVIDES 100% INSULATING EFFICIENCY:** The usual laboratory testing procedure does not take into consideration the factors of wind infiltration and improper cutting and fitting in the installation of the insulating material tested. Sprayo-Flake Insulation insures 100% insulating efficiency because it is "Tailor-Made," Spray-Molded, and Bonded securely in place.

**MULTIPLE PURPOSE:** Sprayo-Flake Insulation applied for one specific purpose invariably provides the advantages, without additional cost, of all three—thermal insulation—noise reduction—condensation control.

**LOW THERMAL CONDUCTIVITY:** 0.246 BTU per hour, per square foot, per inch thickness, per degree temperature differential, for Type DF.

### IN GENERAL—SPRAYO-FLAKE INSULATION:

- Is sprayed with Sprayo-Flake Insulation Guns any required thickness (i.e.,  $\frac{1}{2}$ ",  $\frac{3}{4}$ ", 1",  $1\frac{1}{4}$ " or  $1\frac{1}{2}$ " in one operation) on masonry, concrete, aluminum, steel, cement and asbestos board, cement block, cinder block, hollow tile, wood, etc.
- Is a 100% efficient "Tailor-Made Bonded Insulation Mat" that stops heat, cold, drafts, wind, etc.
- Forms a Continuous Bonded Thermal Insulation Mat that will not slip, sag or settle.
- Bonds to structural surfaces treated and conforms to surface contours covering all structural joints, cracks and crevices.
- Has no holes, laps, gaps, seams, cracks, joints, and does not require cutting, fitting, nailing or tacking.
- Makes it possible to reduce the capacity of heating plant facilities otherwise required.
- Assures greater comfort and substantial fuel savings.

**VERSATILITY:** Sprayo-Flake Insulation is a versatile product produced from fibrous insulating materials and adhesives suited to simultaneous Sprayo-Flake Insulation Gun application to structural surfaces having regular or irregular centers, spacings or contours. New types and adaptations of Sprayo-Flake Insulation, each particularly adapted for specific purposes, are continuously under development by our Engineering Department. Consult the Sprayo-Flake Company for suggestions as to proper Type of Sprayo-Flake Insulation for your Insulation, Condensation and Sound Control problems.



## STANDARD TYPES

**TYPE "DF"**—A Continuous Bonded Thermal Insulation Mat composed of No. 9745 Sprayo-Flake Fire-Resistant Cellulose Fibres with No. 9720 Sprayo-Flake Asphaltic Binder and Surface Coating. Applied in  $\frac{1}{2}$ ",  $\frac{3}{4}$ ", 1",  $1\frac{1}{4}$ ", or  $1\frac{1}{2}$ " thickness in one operation—for required thickness see "Heat Transmission Comparison Data" on page 3. Natural or tamped surface. Natural black surface color or overcoated with Sprayo-Flake No. 9715 Aluminum "Spray-Seal" Thermal Insulation Coating.

**TYPE "DF-C"**—Same as Type "DF" except increased adhesive concentration. Recommended for exposures and occupancy conditions requiring additional moisture vapor resistance as well as for metal surfaces and the underside of roof and ceiling areas.

**TYPE "DF-C-MC"**—Same as Type "DF-C" except coated with No. 9780 Sprayo-Flake Fibrated Mastic Asphalt and overcoated with No. 9720 Sprayo-Flake Asphaltic Surface Coating. Natural black surface color or overcoated with Sprayo-Flake No. 9715 Aluminum "Spray-Seal" Thermal Insulation Coating. Recommended for exterior applications on tanks, dust collectors, special building structures, etc.

**TYPE "DF-C-XR"**—Same as Type "DF-C" except overcoated with a  $\frac{1}{4}$ " or  $\frac{1}{2}$ " thick Incombustible Type "XR" Spray-Acoustic Mat which provides a gray-white, light reflective, sound absorbing, incombustible interior exposed surface.

**TYPE "XRA"**—A Continuous Bonded Thermal Insulation Mat composed of No. 9702 Sprayo-Flake Incombustible Blended Mineral Wool and Asbestos Fibres with No. 9720 Sprayo-Flake Asphaltic Binder and Surface Coating. Applied in  $\frac{1}{2}$ ",  $\frac{3}{4}$ ", 1",  $1\frac{1}{4}$ ", or  $1\frac{1}{2}$ " thickness in one operation. Natural or tamped surface. Natural black surface color or overcoated with Sprayo-Flake No. 9715 Aluminum "Spray-Seal" Thermal Insulation Coating.

**TYPE "XRA-C"**—Same as Type "XRA" except increased adhesive concentration. Recommended for exposures and occupancy conditions requiring additional moisture vapor resistance as well as for metal surfaces and the underside of roof and ceiling areas.

**TYPE "XRA-C-MC"**—Same as Type "XRA-C" except coated with No. 9780 Sprayo-Flake Fibrated Mastic Asphalt and overcoated with No. 9720 Sprayo-Flake Asphaltic Surface Coating. Natural Black surface color or overcoated with Sprayo-Flake No. 9715 Aluminum "Spray-Seal" Thermal Insulation Coating. Recommended for exterior application on tanks, dust collectors, special building structures, etc.

**TYPE "XRA-C-XR"**—Same as Type "XRA-C" except overcoated with a  $\frac{1}{4}$ " or  $\frac{1}{2}$ " thick Incombustible Type "XR" Spray-Acoustic Mat which provides a gray-white, light reflective, sound absorbing, incombustible interior exposed surface.

**TYPE "PB" PLASTERBASE**—A Continuous Bonded Thermal Insulation Plasterbase composed of No. 9745 Sprayo-Flake Fire-Resistant Cellulose Fibres with No. 9720 Sprayo-Flake Asphaltic Binder and Surface Coating. Applied in a  $\frac{1}{2}$ " or  $\frac{3}{4}$ " thickness in one operation. See illustrations and details on page 7.

**TYPE "SPRAYO-BATT"**—See illustrations and details on page 6.



## HEAT TRANSMISSION COMPARISON DATA

Through Uninsulated and Sprayo-Flake Insulated Construction

Expressed in B.t.u. per hour, per square foot, per degree difference in temperature

Below are given comparative figures for heat transmission of various types of construction, uninsulated and insulated with various thicknesses of Sprayo-Flake Insulation.

These figures, obtained experimentally by Prof. Frank B. Rowley of the University of Minnesota by means of the "Hot-box" method, approved by A.S.H.V.E. check closely with estimated values and are suitable for use in estimating heat loss in figuring heating and air-conditioning installations.

**Construction—(A)** Steel Frame Walls covered with Corrugated Sheet Steel. **(B)** Same construction as (A) plus Sprayo-Flake Insulation.



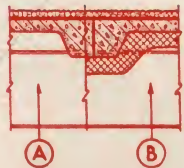
A—Not Insulated	B—Sprayo-Flake Insulated			
	½ inch	1 inch	1½ inch	2 inch
1.500	0.375	0.215	0.150	0.116

**Construction—(A)** Built-up Roofing—Steel Deck supported on steel purlins. **(B)** Same construction as (A) plus Sprayo-Flake Insulation.



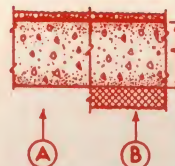
A—Not Insulated	B—Sprayo-Flake Insulated			
	½ in.	1 in.	1½ in.	2 in.
0.950	0.328	0.198	0.142	0.111

**Construction—(A)** Built-up Roofing—1 inch thick Precast Cement Tile supported on steel purlins. **(B)** Same as (A) plus Sprayo-Flake Insulation.



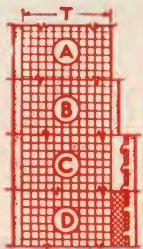
A—Not Insulated	B—Sprayo-Flake Insulated			
	1 in.	1½ in.	2 in.	2½ in.
0.840	0.193	0.139	0.109	0.089

**Construction—(A)** Built-Up Roofing—Concrete Roof Slab. **(B)** Same construction as (A) plus Sprayo-Flake Insulation.



Thick- ness T	A—Not Insulated	B—Sprayo-Flake Insulated		
		1 in.	1½ in.	2 in.
4 in.	0.72	0.185	0.135	0.106
6 in.	0.64	0.180	0.132	0.105

**Construction—(A)** Brick. **(B)** Same as (A)—Plastered. **(C)** Same as (A)—Furring Lath and Plaster. **(D)** Same as (C) plus Sprayo-Flake Insulation.



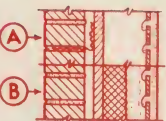
Thick- ness T	Not Insulated			D—Sprayo-Flake Insulated		
	A	B	C	½ in.	¾ in.	1 in.
8½ in.	0.50	0.46	0.30	0.187	0.158	0.136
13 in.	0.36	0.34	0.24	0.163	0.140	0.123

**Construction—(A)** Stucco—Tile. **(B)** Same as (A)—Plastered. **(C)** Same as (A)—Furring, Lath and Plaster. **(D)** Same as (C) plus Sprayo-Flake Insulation.



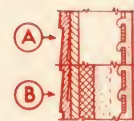
Thick- ness T	Not Insulated			D—Sprayo-Flake Insulated		
	A	B	C	½ in.	¾ in.	1 in.
8 in.	0.40	0.38	0.26	0.170	0.146	0.128
12 in.	0.30	0.29	0.22	0.152	0.133	0.117

**Construction—(A)** Brick Veneer, Air Space, Building Paper, Sheathing, Studding, Lath and Plaster. **(B)** Same as (A) plus Sprayo-Flake Insulation.



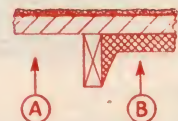
A—Not Insulated	B—Sprayo-Flake Insulated				
	½ in.	1 in.	1½ in.	2 in.	2½ in.
0.270	0.175	0.130	0.103	0.085	0.073

**Construction—(A)** Bevel Siding, Building Paper, Sheathing, Studding, Lath and Plaster. **(B)** Same construction as (A) plus Sprayo-Flake Insulation.



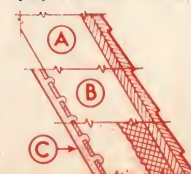
A—Not Insulated	B—Sprayo-Flake Insulated				
	½ in.	1 in.	1½ in.	2 in.	2½ in.
0.250	0.167	0.125	0.100	0.083	0.071

**Construction—(A)** Built-up Roofing— in. Wood Roof Deck on wood joists. **(B)** Same as (A) plus Sprayo-Flake Insulation.



A—Not Insulated	B—Sprayo-Flake Insulated		
	½ in.	1 in.	1½ in.
0.490	0.250	0.166	0.125

**Construction—(A)** Shingles, Building Paper, Boarding, Rafters. **(B)** Same as (A)—Lath and Plaster. **(C)** Same as (B) plus Sprayo-Flake Insulation.



Not Insulated		C—Sprayo-Flake Insulated		
A	B	1 in.	1½ in.	2 in.
0.56	0.32	0.140	0.110	0.090



# Sprayo-Flake Insulation

## THERMAL INSULATION APPLICATION

### On Masonry Construction

Sprayo-Flake Insulation is the ideal insulation for masonry walls because it is bonded securely to the wall surface treated providing highly efficient life-time insulation and at the same time sealing the wall against air infiltration.

Sprayo-Flake Insulation covers all joints, cracks and crevices and because it is bonded, does not slip, sag or settle. High pressures on the outside of walls caused by heavy winds are effectively sealed out.

The emulsified asphaltic adhesive used in applying Sprayo-Flake Insulation is one of the finest damp-proofing agents known to the construction science.

The Sprayo-Flake Insulation Mat adheres securely to all types of masonry construction such as brick, cement tile, cement block, cinder block, concrete, cement and asbestos board, etc.

Thousands of users have found Sprayo-Flake Insulation to be the answer to their insulation problems.

Heat Transmission Comparison Data on page 3.



Sprayo-Flake Thermal Insulation being applied between furring strips on the inner surface of brick wall.

### On Steel Construction

Sprayo-Flake Insulation is especially well adapted to use on all types of metal buildings. Being plastic in nature, it bonds and conforms to the surface of the outer covering without cutting and fitting. Sprayo-Flake Insulation stops the infiltration of air through joints between adjacent siding sheets. These properties add up to substantial savings in both installations and maintenance throughout the life of the building.

Sprayo-Flake Insulation has proven to be the most practical insulation for all types of steel and metal buildings.

The Sprayo-Flake Bonded Insulation Mat is applied to the required thickness to the inside surface of the metal roof decking or sheet metal walls. Sprayo-Flake Insulation is usually applied around exposed purlins in a  $\frac{1}{4}$ " to  $\frac{3}{8}$ " thickness.

Sprayo-Flake Insulation not only reduces winter heat loss but also materially reduces summer temperatures within the building.

Heat Transmission Comparison Data on page 3.



Sprayo-Flake Thermal Insulation being applied to the underside of metal roof deck and around exposed purlins.

### On Wood Construction

Sprayo-Flake Insulation is bonded directly to wood sheathing, roof decks, etc. Since Sprayo-Flake Insulation is plastic in nature and is spray-molded in place it is easily applied between structural members with either regular or irregular spacings.

Many Sprayo-Flake Insulation applications have been made in frame constructed buildings providing both winter and summer comfort. Some frame constructed buildings that would otherwise have been impossible to heat have been converted into economically heated buildings with the application of Sprayo-Flake Insulation.

The Sprayo-Flake Insulation Mat covers all cracks and crevices and it not only provides a highly efficient insulation but it also seals the exposed surfaces against cold and warm air infiltration.

See page 6 for "Sprayo-Batt Vapor Sealed Thermal Insulation" and page 3 for Heat Transmission Comparison Data.



Sprayo-Flake Thermal Insulation applied on wood sheathing between wall studs.



## SOUND INSULATION

Sprayo-Flake Insulation is a very effective sound deadening insulation when applied directly to one side of the sound transferring membrane. Tests were made by the C. F. Burgess Laboratories on floors and walls before and after being treated with Sprayo-Flake Insulation in actual structures.

### FOR CEILINGS

See complete acoustical data and illustrations in section 11a Sweet's 1948 Architectural Catalog.

### FOR FLOORS

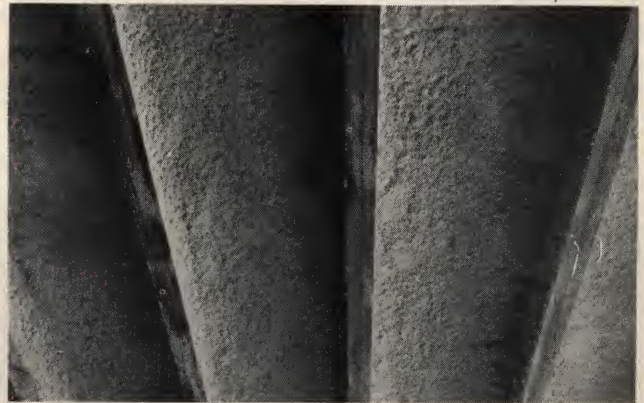
When the tests were made on the uninsulated and the Sprayo-Flake Insulated 2½" concrete floors it was found that 5½ times as much noise in physical units passed through the uninsulated floor as passed through the same floor insulated with Sprayo-Flake Insulation.



Sprayo-Flake Thermal Insulation being applied on the inner surface of cinder block masonry wall to be left exposed.



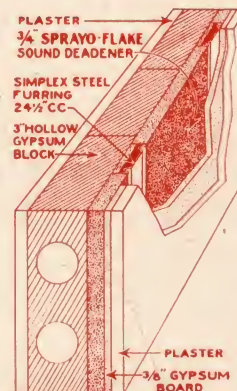
Sprayo-Flake Thermal Insulation being applied to the underside of sloping metal roof of steel constructed building.



Underside of Concrete Floor between Steel Joists Insulated with Sprayo-Flake Insulation.

### FOR WALLS

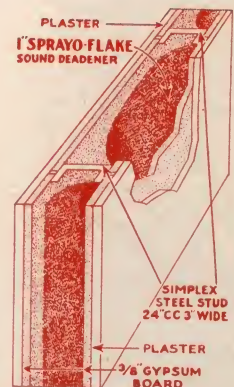
Sprayo-Flake Insulation provides an excellent sound barrier in both interior and exterior wall construction. It is well adapted for use in hospitals, clinics, consultation offices, apartments, residences, public, educational, commercial and industrial buildings. Typical interior partition wall constructions are illustrated below.



Wall "A"

The construction of wall "A" consisted of 3 inch standard hollow gypsum partition tile, plastered with ½ inch of gypsum plaster on one side and Simplex Steel Furring, ¾ inch Sprayo-Flake, ⅜ inch gypsum lath covered with ½ inch gypsum plaster.

Logarithm of Reduction	6.27
Reduction in Sensation Units	62.70



Wall "B"

The construction of wall "B" consisted of Simplex Steel Studs, ⅜ inch gypsum lath covered with ½ inch of gypsum plaster on both sides and 1 inch of Sprayo-Flake.

Logarithm of Reduction	4.75
Reduction in Sensation Units	47.50

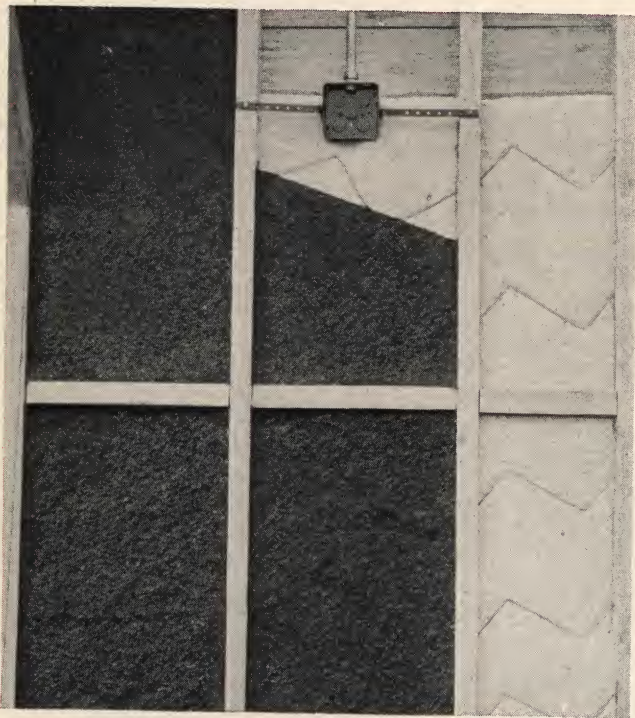


Sprayo-Flake Thermal Insulation applied to the underside of wood roof planking between roof joists.



# Sprayo-Flake Insulation

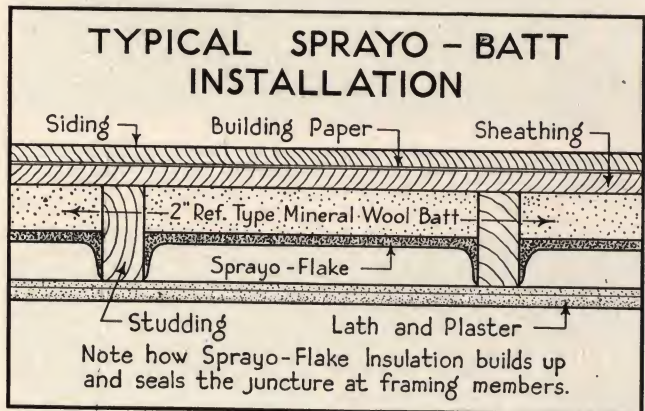
## SPRAYO-BATT VAPOR SEALED THERMAL INSULATION



Section of Sprayo-Batt installation showing Refrigerator Type Mineral Wool Batts held in place with steel Z spring clips and a ½" thick Sprayo-Flake Insulation mat applied over batts.

Sprayo-Batt Thermal Insulation is a moisture resisting combination of Refrigerator Type Mineral Wool Batts and Sprayo-Flake Insulation. Two-inch Refrigerator Type Mineral Wool Batts are installed between the wood framing members held in place by steel Z spring clips. On the inner or warm side of the Refrigerator Type Mineral Wool Batts a ½" thick mat of Sprayo-Flake Insulation Type "DF-C" (or "XRA-C") is applied which provides an effective vapor-proof barrier.

Sprayo-Batt Thermal Insulation is an ideal insulation for frame and brick veneer constructed buildings. Tests and experience have shown that a vapor seal is necessary if wall insulation materials are to function at their maximum efficiency. In Sprayo-Batt insulation the spray-molded sealing mat functions also as an insulation.



### HEAT INSULATION COEFFICIENTS

Construction	No Insulation	Insulated with 2-2½" Sprayo Batt
<b>Frame Construction</b>		
Siding, Sheathing, Paper, Wood Studs, Lath and Plaster	.260	.080
<b>Brick Veneer Construction</b>		
4" Brick, Sheathing, Paper, Wood Studs, Lath and Plaster	.280	.082
<b>Ceiling with no Flooring</b>		
Wood Joists and Metal Lath and Plaster	.690	.098
<b>Ceiling with Flooring</b>		
Wood Joists, Rough Flooring, Metal Lath and Plaster	.300	.084

Sprayo-Batt overall thermal conductivity is 0.10 B.T.U. per hr., per sq. ft. per deg. temp. differential.

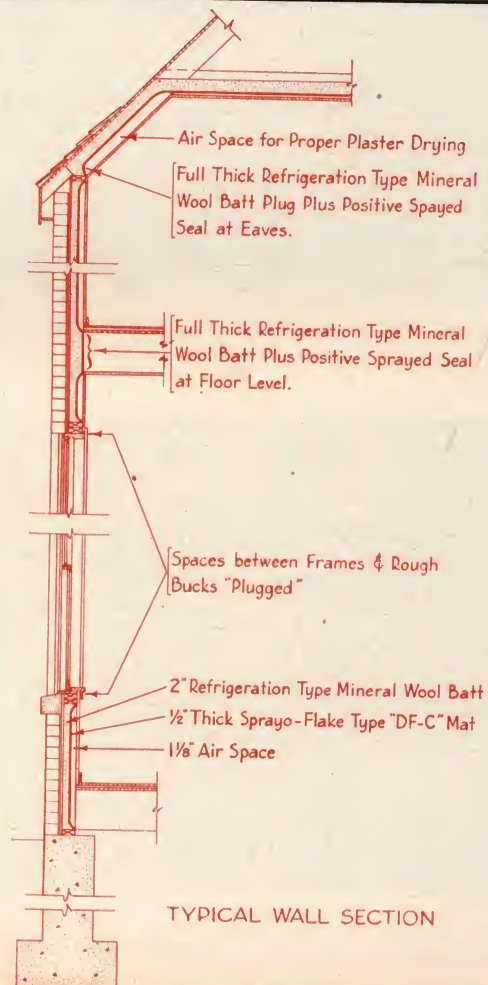
### Specification

Install in areas listed below Sprayo-Batt Insulation as manufactured by Sprayo-Flake Company, Chicago, Illinois: (Here list exterior walls, roofs, ceilings, floors, etc.).

Materials shall be 2" thick Refrigerator Type Mineral Wool Batts vapor sealed on the inside by a ½" thick layer of Sprayo-Flake Insulation Type "DF-C" (or "XRA-C").

Installation shall be by experienced workmen under the direct supervision of a Licensed Sprayo-Flake Applicator.

Refrigerator Type Mineral Wool Batts shall be installed next to the sheathing or roof boards between the structural members and secured in place by steel Z spring clips spaced approximately 16" o.c., over the Refrigerator Type Mineral Wool Batts so installed shall be applied a ½" thick continuous moisture and wind-proof membrane of Sprayo-Flake Insulation Type "DF-C" (or "XRA-C") with an overspray of emulsified asphalt. This membrane shall effectively seal all openings and interstices.



TYPICAL WALL SECTION



## SPRAYO-FLAKE PLASTERBASE

### Insulating — Damp Proofing

Sprayo-Flake Type "PB" Plasterbase solves the disturbing problem of how to dampproof, insulate and lath solid masonry walls economically.

Sprayo-Flake Type "PB" Plasterbase is applied with the same process and ingredients as Sprayo-Flake Insulation Type "DF-C" but the proportions are distinctly varied. The result is a product rich in dampproofing qualities but still resilient enough to absorb ordinary building strains, practically eliminating the danger of unsightly plaster cracks. The facts contained herein have been arrived at through exhaustive tests conducted over a period of many years in our own plant as well as in the field.

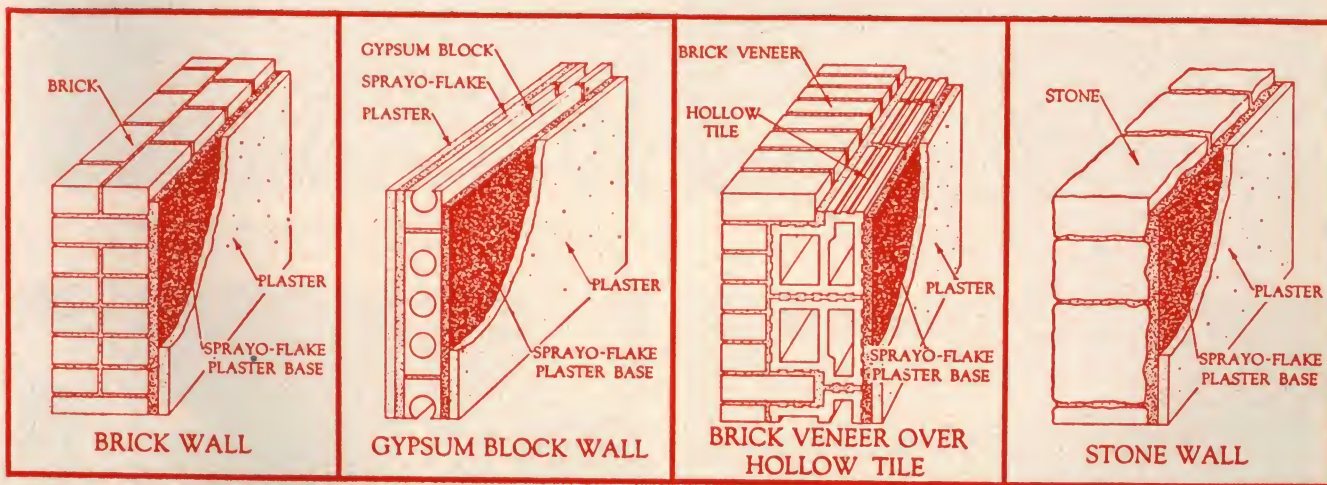
When used on either interior or exterior walls it should be noted that the base obtained for plaster is unique in that a combination suction and mechanical bond is obtained. The plasterbase has a rough, hard surface to which plaster may readily key mechanically, yet is porous enough to offer an excellent suction bond. Tests conducted at the Detroit Builders and Trades School on this particular point indicate a bonding strength in excess of 300 lbs. per sq. ft.

Sprayo-Flake Type "PB" Plasterbase may be applied to interior partitions as well as exterior walls, thereby furnishing a break in density invaluable in reducing the passage of sound. The introduction of a resilient material reduces vibration to a point where it is not discernible above the ordinary occupational noises.

It is an excellent sound deadener for partition walls in hotels, hospitals, institutions, apartments, clinics, public and commercial buildings, etc.



View showing the application of Type "PB" Plasterbase being applied with the Sprayo-Flake Insulation Gun to the interior surface of cinder block masonry wall.



Cross sections of Brick, Gypsum Block, Brick Veneer over Hollow Tile and Stone walls shown above showing the use of Sprayo-Flake Type "PB" Plasterbase in each type of wall construction. Note how the Sprayo-Flake Type "PB" Plasterbase mat provides a resilient insulation mat between the outer wall structure and the inner plaster. This resilient insulation mat takes up any ordinary difference in shrinkage or settlement between the outer wall structure and the inner plastered membrane thus practically eliminating cracks in the plastered surface.

### Specification

First, thoroughly clean the masonry surface by compressed air removing all dirt, loose mortar particles, etc.

Second, prime the masonry surface with a Sprayo-Flake Insulation Gun applied priming coat consisting of No. 9720 Sprayo-Flake Emulsified Asphaltic Adhesive Mixture. In the case of extremely porous masonry this operation shall be repeated after complete penetration of the first coat is achieved.

Third, apply the Sprayo-Flake Insulating Plasterbase to the

primed, dampproofed masonry surface of  $\frac{1}{2}$ " (or  $\frac{3}{4}$ ") thick. In the case of rough masonry, irregularities shall not exceed 1" in depth and all such depressions must be filled level with the Sprayo-Flake Type "PB" Plasterbase following the priming before the standard application is made.

Fourth, after application, the Sprayo-Flake Type "PB" Plasterbase surface shall be troweled semi-smooth and the entire surface given an overspray of No. 9720 Sprayo-Flake Emulsified Asphaltic Binder of the same consistency as the priming coat.

**NOTE**—Cement Plaster should not be applied on Type "PB."



# *Sprayo-Flake Insulation*

THE PERFECT INSULATION FOR ALL TYPES OF BUILDINGS



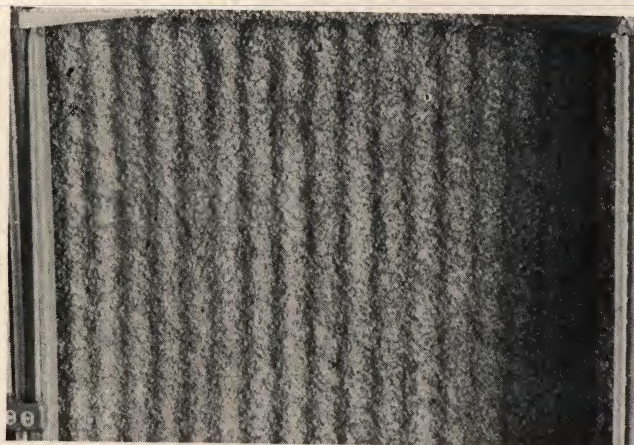
Large Steel Constructed Building Insulated with Sprayo-Flake Insulation.



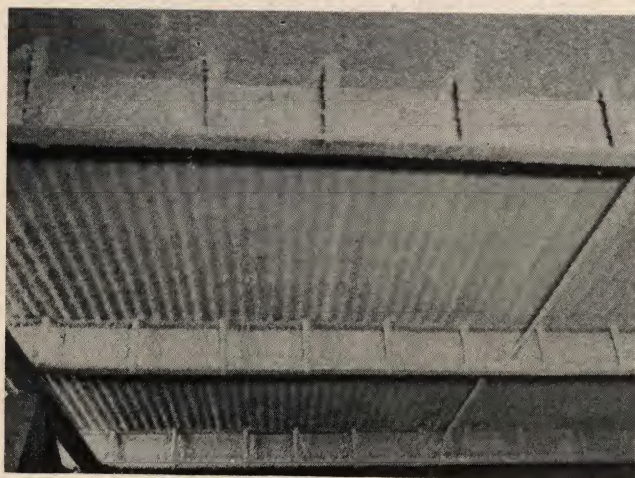
Section of Typical Quonset Building Insulated with Sprayo-Flake Insulation.



Section of Corrugated Side Wall Insulated with Sprayo-Flake Insulation.



Close-up View of 1" Thickness of Type "DF-C" with No. 9715 Alum. on Corrugated Metal.



Section of Corrugated Roof Insulated with Sprayo-Flake Insulation.



Multiple Type Quonset Building Insulated with Sprayo-Flake Insulation.

**SPRAYO-FLAKE COMPANY**

2721 IRVING PARK ROAD

CHICAGO 18, ILLINOIS

Telephone: INdependence 3-3300



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